

AMENDMENTS

In the Claims:

Please amend the claims as indicated hereafter.

1. (Currently Amended) A network router, comprising:

memory;

a layer 1 portion having a first communication interface and a second communication interface;

a layer 2 portion;

a layer 3 portion having a layer 3 protocol stack, said layer 3 protocol stack having a routing table stored in said memory and specifying, for a particular destination, a data path from said layer 3 portion to said layer 2 portion, said layer 3 protocol stack configured to provide a plurality of data packets destined for the particular destination and to route through said data path each of said data packets based on said routing table, said layer 3 protocol stack further configured to detect [[an]] a layer 3 error condition; and

switching logic configured to automatically initiate a layer 2 switch for said layer 2 portion of said network router in response to a detection of said error condition by said layer 3 protocol stack such that said layer 2 portion interfaces a plurality of said data packets with said second communication interface in lieu of said first communication interface, wherein said layer 2 switch is transparent to said layer 3 portion, wherein said layer 2 portion is configured to interface at least one of said data packets with said first communication interface prior to said layer 2 switch, wherein said first communication interface is configured to transmit said at least one data packet to a second router via a first protocol over a first data path through a first network, and wherein said second communication interface is configured to transmit said plurality of said data packets to said second router via a second protocol over a second data path through a second network.

2. (Previously Presented) The router of claim 1, wherein said switching logic is further configured to automatically initiate another layer 2 switch, in response to a detection that said error condition is resolved, such that said layer 2 portion interfaces a second plurality of said data packets with said first communication interface in lieu of said second communication interface.

3. (Previously Presented) The router of claim 1, wherein said second protocol is point-to-point protocol (PPP).

4. (Original) The router of claim 1, wherein said first data path comprises a T1 link.

5. (Original) The router of claim 4, wherein said second communication interface comprises a modem.

6. (Currently Amended) A network router, comprising:

memory;

a layer 3 protocol stack configured to provide a plurality of data packets to be transmitted by said network router to a second router, the layer 3 protocol stack having a routing table stored in said memory and specifying a data path for routing said plurality of data packets to said second router, the layer 3 protocol stack configured to insert, into each of said plurality of data packets, route information indicative of said data path based on said routing table, the layer 3 protocol stack further configured to detect [[an]] a layer 3 error condition;

a first layer 2 protocol stack;

a second layer 2 protocol stack;

a plurality of layer 3 network interfaces configured to receive data packets from said layer 3 protocol stack, wherein said layer 3 protocol stack is configured to provide each of said plurality of data packets to one of said layer 3 network interfaces; and

layer 2 switching logic configured to receive each of said plurality of data packets from said one layer 3 network interface, said layer 2 switching logic configured to provide at least one of said plurality of data packets to said first layer 2 protocol stack such that said at least one of said plurality of data packets is transmitted via a primary network and a first protocol to said second router, said layer 2 switching logic configured to perform a layer 2 switch in said network router in response to a detection of said error condition by said layer 3 protocol stack such that said layer 2 switching logic provides, in response to said detection, at least one other of said plurality of data packets to said second layer 2 protocol stack such that said at least one other of said plurality of data packets is transmitted via a secondary network and a second protocol to said second router, wherein said layer 2 switch is transparent to said layer 3 protocol stack.

7. (Previously Presented) The system of claim 6, further comprising:

a first communication interface configured to transmit, over said primary network to said second router, each of said plurality of data packets provided to said first layer 2 protocol stack;
and

a second communication interface configured to transmit, over said secondary network to said second router, each of said plurality of data packets provided to said second layer 2 protocol stack.

8. (Original) The system of claim 7, wherein said protocol stacks, said network interfaces, said switching logic, and said communication interfaces are each integrated within a housing unit.

9. (Canceled)

10. (Previously Presented) The router of claim 6, wherein said layer 2 switching logic is configured to provide at least one of said plurality of data packets to said first layer 2 protocol stack in response to a determination that said error condition has been resolved.

11. (Previously Presented) A method for use in a network router, comprising the steps of:

- providing data packets from a layer 3 portion of said network router, said layer 3 portion including a routing table specifying route information for said data packets;
- inserting said route information into each of said data packets;
- interfacing, via a layer 2 portion of said network router, a first plurality of said data packets with a first communication interface of a layer 1 portion of said network router;
- communicating said first plurality of data packets from said first communication interface over a primary data path to a second router via a first protocol;
- detecting, via said layer 3 portion of said network router, a layer 3 error condition associated with said primary data path;
- automatically performing a layer 2 switch in said network router in response to said detecting step such that said layer 2 portion of said network router interfaces a second plurality of said data packets with a second communication interface of said layer 1 portion; and
- communicating said second plurality of data packets from said second communication interface over a backup data path to said second router via a second protocol,

wherein said layer 2 switch is transparent to said layer 3 portion.

12. (Previously Presented) The method of claim 11, further comprising the steps of:

- automatically performing a second layer 2 switch in response to a detection that said layer 3 error condition has been resolved such that said layer 2 portion interfaces a third plurality of said data packets with said first communication interface; and
- communicating said third plurality of data packets from said first communication interface over said primary data path to said second router via said first protocol.

13. (Previously Presented) The method of claim 11, wherein said second protocol is point-to-point protocol (PPP).

14. (Original) The method of claim 11, wherein said second communication interface comprises a modem.

15. (Original) The method of claim 14, wherein said primary data path comprises a T1 link.

16. (Previously Presented) A method for use in a network router, comprising the steps of:
using a layer 3 protocol stack within said network router to provide a plurality of data packets, said layer 3 protocol stack including a routing table specifying route information for said plurality of data packets;

inserting said route information into each of said plurality of data packets;

transmitting said data packets from a first layer 1 communication interface over a primary data path to a second router via a first protocol and from a second layer 1 communication interface over a backup data path to said second router via a second protocol;

transmitting each of said data packets to one of a plurality of layer 3 network interfaces within said network router;

detecting, via said layer 3 protocol stack, a layer 3 error condition associated with said primary data path;

transmitting at least one of said data packets from said one layer 3 network interface to a first layer 2 protocol stack of a plurality of layer 2 protocol stacks within said network router; and

changing which of said plurality of layer 2 protocol stacks receives said data packets based on said detecting step without updating said layer 3 protocol stack based on said detecting

step such that at least one of said data packets is received by a second layer 2 protocol stack of said plurality of layer 2 protocol stacks within said network router,

wherein each of said data packets received by said first layer 2 protocol stack is transmitted over said primary data path and each of said data packets received by said second layer 2 protocol stack is transmitted over said backup data path.

17. (Previously Presented) The router of claim 1, wherein said layer 3 portion is configured to insert, into each of said data packets, the same route information based on said routing table.

18. (Previously Presented) The router of claim 1, wherein said second data path is a dedicated path from said network router to said second router.

19. (Currently Amended) A network router, comprising:

memory;

a layer 1 portion having a first communication interface and a second communication interface, wherein said first communication interface is configured to transmit to a second router via a first protocol over a primary data path through a first network, and wherein said second communication interface is configured to transmit to said second router via a second protocol over a backup data path through a second network;

a layer 2 portion;

a layer 3 portion having a layer 3 protocol stack, said layer 3 protocol stack having a routing table stored in said memory and configured to provide a plurality of data packets destined for a particular destination, said plurality of data packets including at least a first data packet and a second data packet, said layer 3 protocol stack configured to insert layer 3 route information into a respective header of each of said plurality of data packets based on said routing table, said layer 3 route information indicative of said primary data path, said layer 3 protocol stack configured to detect [[an]] a layer 3 error condition associated with said primary data path, wherein said first data packet is transmitted by said first communication interface via said first protocol over said primary data path to said second router; and

switching logic configured to automatically initiate a layer 2 switch in said network router in response to a detection of said error condition by said layer 3 stack such that said layer 2 portion interfaces said second data packet with said second communication interface, wherein said second data packet is transmitted by said second communication interface via said second protocol over said backup data path to said second router, and wherein said layer 2 switch is transparent to said layer 3 portion.